

XIX.—A NEW SPIDER OF BENGAL, MIMICKING
OECOPHYLLA SMARAGDINA (FABR.).

(With three text-figures).

So far as I am aware, two species of spiders have been recorded by different authors, as mimics of the red-ant (*Oecophylla smaragdina*);¹ one of them, *Myrmarchne plataleoides* of the family *Salticidae* or *Attidae*² is a perfect mimic while the other, *Amyciaca forticeps*, Camb. of the family *Thomisidae*³ is not so prominent.

In 1931, while collecting spiders from Lonsing, a village in East Bengal, I came across a peculiar female spider with its small pea-like faint brownish cocoon hanging from some tiny irregular silk-lines upon a middle-sized plant (*Nyctanthes arbor tristis* Linn.). The red-ants were in abundance upon the plant, though the spider itself was not found in company with them. She was very busy with her cocoon on a secluded branch of the plant. From external structure, the spider seems to be of the genus *Propostira*, Simon, of the *Theridiidae* family and is described below under the name *Propostira ranii*, sp. nov.

The spider showed a peculiar resemblance to *Amyciaca forticeps* Camb. in colour and in some other respects; but there are some striking differences in the formation of the body and its appendages. This seems to exhibit 'protective mimicry' or 'beneficial likeness' to *Oecophylla smaragdina* (Fabr.). The general appearance, colour and movements of the spider are so very ant-like that it can pass unnoticed in the midst of the ants, though the ant and the spider are not much alike when examined minutely.

About the protective mimicry of Line-weaving or Orb-weaving ant-like spiders Dr. McCook says:—'Whether or not any ant-like species are found among sedentary tribes I do not know. But it entirely passes my imagination to conceive what possible advantage could accrue to an Orb-weaver, for example from resemblance to an ant. Orb-weavers, and yet more frequently Line-weavers prey upon ants; but it is not necessary that there should be any resemblance to the emmet in order to accomplish the destruction of vast numbers of them, as I can fully testify. As the Orb-weavers and Line-weavers do not leave their snares to capture prey and move among the ants after the fashion of the

¹ (a) Hingston, Major R. W. G., I.M.S., F.Z.S., 'Field Observations on Spider Mimics', *Proc. Zool. Soc. Lond.*, ii, p. 844 (1927).

(b) Simon, E., *Hist. Nat. Des Araignées*, Paris, T., ii, p. 502 (1897-1901).

² Simon, E., *Hist. Nat. Des Araignées*, Paris, T. ii, pp. 496-505 (1897-1901).

³ (a) *Ibid.*, Tome premier, p. 986 (1892-1895).

(b) Hingston, R. W. G., *Proc. Zool. Soc. Lond.*, ii, pp. 844-848 (1927).

(c) Kunhikannan, K., 'An Aggressive Mimic of the Red Tree Ant', *Jour., Bom. Nat. Hist. Soc.*, vol. xxiv, pp. 373-374 (1915).

(d) Mukerji, D. D., 'Report on a Collection of Ants (*Tr. oecophyllini* Forel)', *Jour., Bom. Nat. Hist. Soc.*, vol. xxxiv, pp. 157-158 (1930).

prowling Saltigrades that do mimic ant forms, the fact of ant resemblance, should it exist among them, must have a quite different solution. One could suggest in their case, a protective value in resemblance to wasps, but none at all as against ants.¹

The mimicry of this spider to *Oecophylla smaragdina* may not be a case of protective mimicry against the ants, but it seems that this likeness helps to protect them from their natural enemies, viz., spider-eating lizards and birds, etc., as these are always found to keep at a safe distance from the biting red-ants.

Propostira ranii sp. nov.

The length of the female spider is 3.5 mm. Its cephalothorax is somewhat flat and oval-shaped, being longer rather than broad (Fig 1). The thoracic region is somewhat raised and triangular towards the back. The pedicle is very short and slender. The abdomen is truncated at the posterior extremity and much broader than the cephalo-thoracic region. The dorsum appears to be flattened or slightly concave. Down the abdomen, there are two protuberances or hump-like projections, one on each side, presenting a dorso-lateral aspect, with prominent broad black spot at the base of each of them. Further down, at the edge of the posterior extremity there are two more similar protuberances with similar black spots at their bases. Near the apex, the abdomen is rugose with some transverse black linings extending towards the ventral portion. The body is pubescent and brick-red all over with some blackish shades on the cephalo-thoracic region.

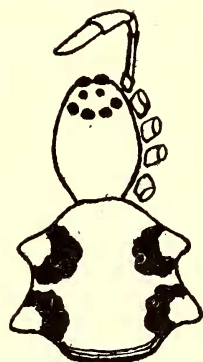


Fig. 1.—Dorsal view of *P. ranii* with 4 humps and prominent black spots.

The eyes, which are eight in number, are arranged in three rows. The anterior row contains the biggest pair of eyes which are projecting forward. The posterior row is procurved and contains four middle-sized eyes. The median row contains the smallest pair of eyes.

Legs are extended more or less in normal fore and aft directions. They are slender and pubescent, the front pair of which is the longest and strongest of all, measuring about 12 mm. The third pair of legs is the shortest while the second and fourth pairs are subequal. All the legs are bright brick-red in colour except the middle tibial and metatarsal portions of the front pair which are pale brown. Tarsal claws are black and two in number without any terminal tenent hairs.

Tibiae and tarsi of the pedipalpi are somewhat swollen in comparison with the rest of the joints. There is one black tarsal claw on each of the pedipalp.

Mandibles are unicate and pluridentate and covered with sparsely distributed black hairs. Maxillae are broad and long

¹ McCook, H. G., *American Spiders and their Spinning Works*, vol. ii, pp. 364-365 (1890).

exceeding the mandibles and thinly covered with black hairs. They are strongly divergent with the semi-circular labium in between them. The sternum is slightly convex and more or less triangular in shape (Fig. 2).

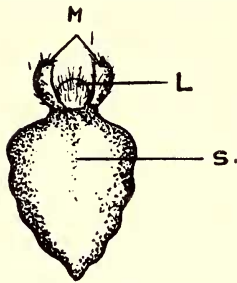


Fig. 2.—M. maxillae, L. labium, S. sternum.

Ventrally, there are some semi-circular folds with black linings on them, around the posterior margin of the abdomen (Fig. 3). The epigynum is very simple, occupying a small space between the pulmonary sacs, with a crescent cup-like atriolum which is swelled in the back. Six spinnerets are seen ventrally and behind them the anal papilla is conspicuous. The anterior pair of spinnerets are broad, sub-cylindrical and thickly covered with short black hairs. The posterior pair is less broad than the anterior pair. In the middle of these two pairs there is a rudimentary pair of spinnerets.

The spider, I collected, spun some irregular lines of thread, covering a small space, to which a pea-like cocoon was attached. The cocoon which I collected along with the spider contained 51 minute eggs which were hatched after 13 days, counting from the date of capture. I have with me a type specimen which has been carefully preserved.

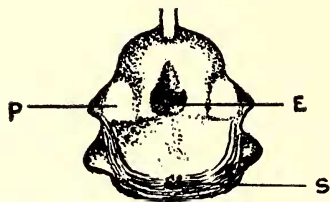


Fig. 3.—Abdomen ventral view. E. epigynum, P. pulmonary sac, S. spinnerets.

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XX.—ON THE MATING HABITS OF SPIDERS.

A study of the courtship among Spiders reveals evidence in favour of Darwin's theory of sexual selection. Engaged in collecting spiders, my one hour's attempt among the bushes was rewarded with five spiders. I secured them alive in separate tubes. They all appeared to be of the same species included in the genus *Peucetia*. One of them was a female and the remaining four males. I performed the following experiment:—

I took a conveniently big glass jar and introduced a circular piece of blotting paper into it to cover the bottom. I put the female specimen and one of the males into the jar and closed its mouth. Above the white background, their actions were clearly visible. At first the male remained still. After five minutes he seemed to exhibit some amorous movements of the limbs, but the menacing attitude of the female drove him away to the side of the jar. She did not wait any more but ferociously pounced on him; a contest ensued in which she gained the victory by killing her suitor.